

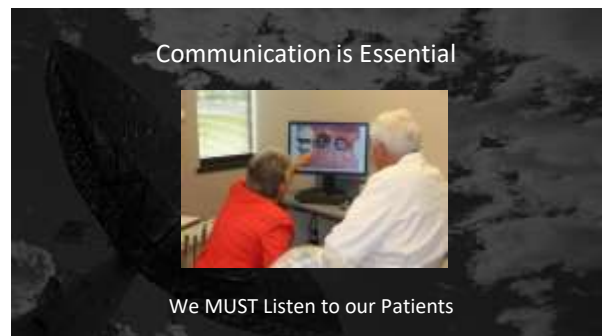
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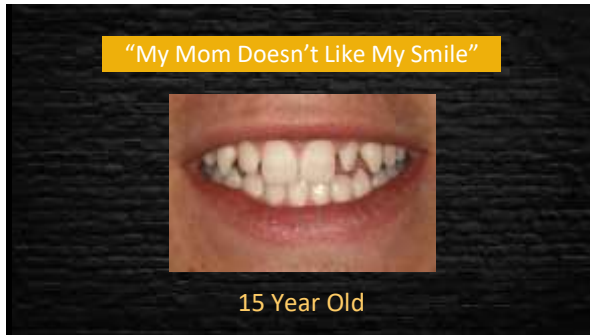
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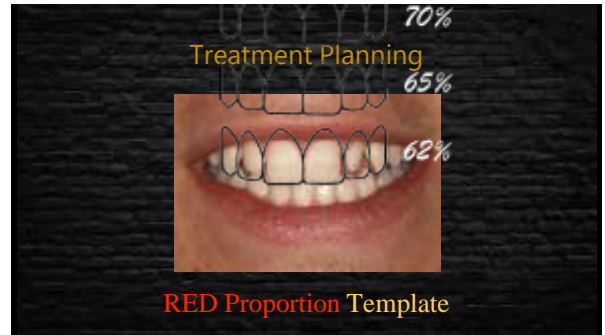
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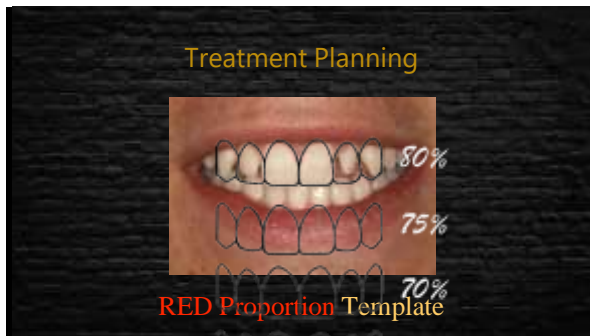
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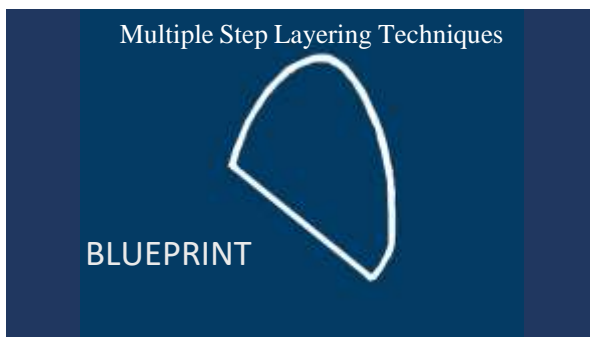
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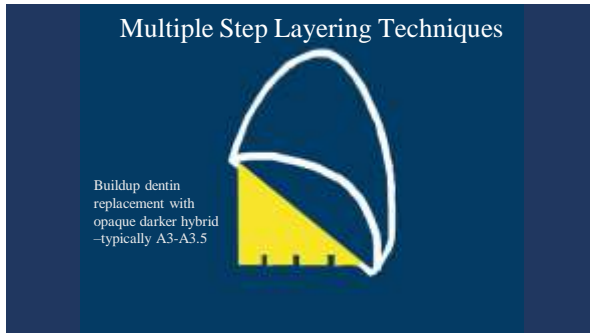
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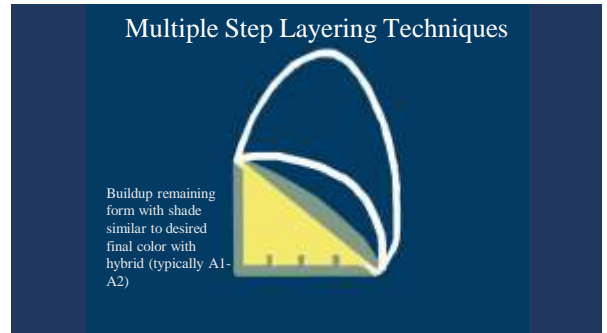
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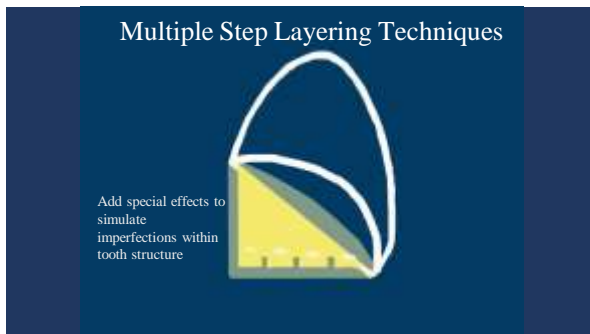
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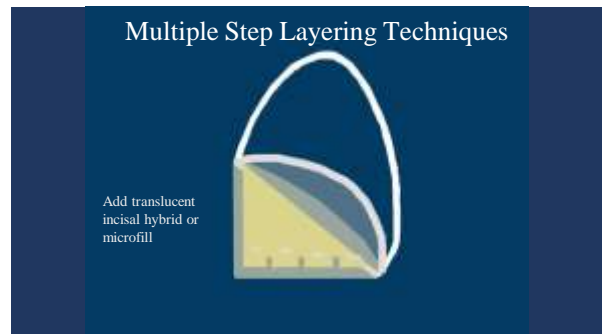
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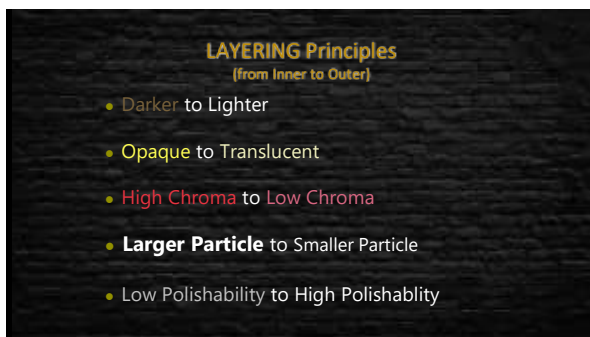
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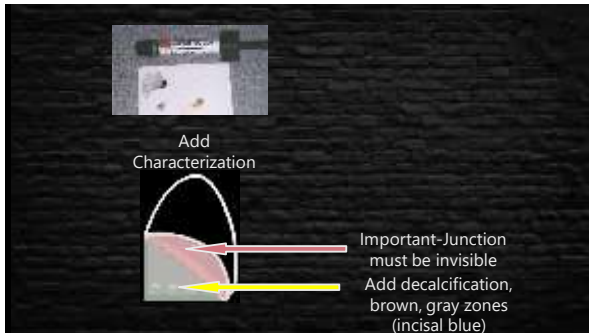
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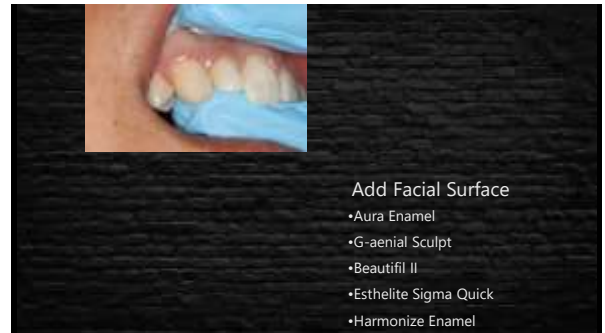
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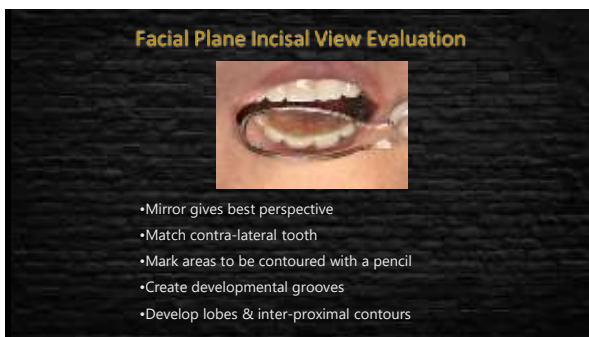
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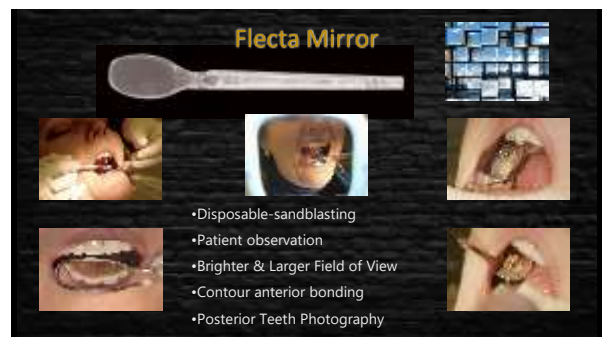
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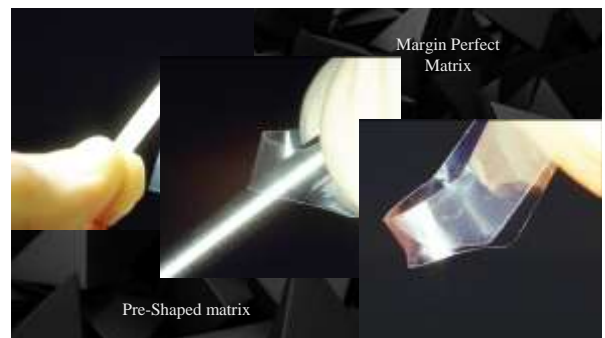
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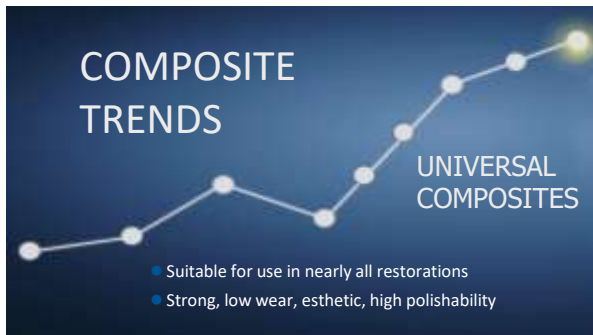
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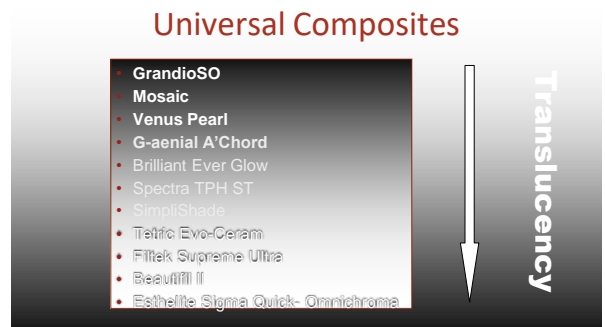
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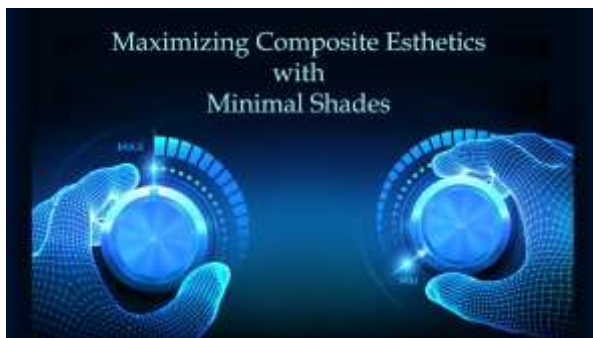
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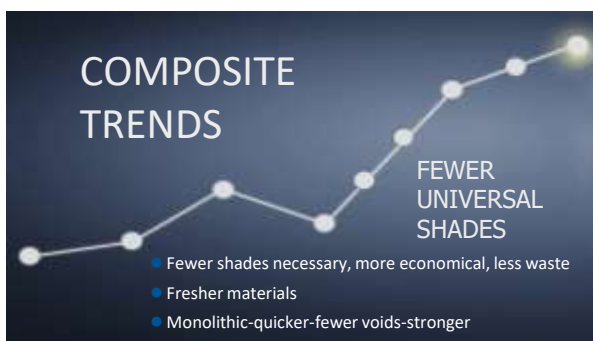
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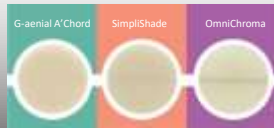
41



42

Blended Shades Universals

- G-aenial A'Chord
- SimpliShade
- Omnichroma



OPACITY

43

Universal Composites



Universal

Omnichroma

45

Universal Composites



★ Blocker

Universal

Omnichroma

46

Omnichroma



• Properties

- High translucency-natural tooth shines through
- Use layering technique to block out
- Uniform spherical particles-optimized for tooth colors
- Similar to D2 Enamel Shade

• Advantages

- Two shades-Economical
- Use fresher composite material
- Works best for smaller restorations with limited "through & through"

47

Anterior Restorations



- Smaller
- Incisal edge
- Limited through & through



48

Universal Composites



Light, Medium, Dark

SimpliShade

49

Universal Composites



- ★ Plus 2 More Shades
 - Bleach White
 - Universal Opaque

Light, Medium, Dark

SimpliShade

Simpli Shade



- Properties
 - Medium translucency
 - Nano-hybrid
 - Optimized for light reflection & refraction
- Advantages
 - Fewer shades means less waste
 - Easy to select color
 - Allows fresher composite material
 - Works best for small-medium restorations with limited “through & through”

50

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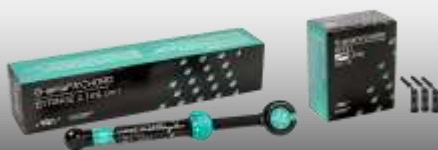


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53

Universal Composites



A1, A2, A3, A3.5, A4

G-aenial A'Chord

G-aenial A'Chord



A1, A2, A3, A3.5, A4 Core Shades

G-aenial A'Chord

54

55

G-aenial A'Chord



- Properties
 - Good masking and blending properties
 - Excellent polishability
 - Low wear
- Advantages
 - Universal in large anterior and posterior cases
 - Blocks out stains and dark dentin-Class I & V
 - Fewer shades needed to better match all VITA shades
 - More economical, allows fresher material
 - Natural esthetics and fluorescence



56



57



58



59



60



61



62

HOW CAN WE SYNERGIZE COMPOSITE PLACEMENT?



- TO COMBINE OR COORDINATE THE ACTIVITY OF TWO OR MORE AGENTS TO PRODUCE A JOINT EFFECT GREATER THAN THE SUM OF THEIR SEPARATE EFFECTS

- Composite Materials
 - Give Strength
 - Lower Wear
 - More Aesthetic
- Bioactive Materials
 - Decrease Sensitivity
 - Remineralization
 - Combat Recurrent Decay

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Bioactivity



64

Bioactive



Having an effect upon a living organism, tissue, or cell.
Biologically active.

65

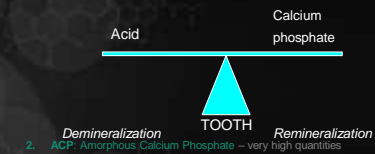
Bioactivity



Dentistry's SMART TECHNOLOGY

66

BIOACTIVE MATERIALS



- Smart Technology creates an environment that favors remineralization

67

Bioactive Dental Activity

- Responds to an Acidic Oral Environment
- Exchanges ions to and from biological structure
- Releases Calcium, Phosphates, Fluoride, other ions
- Regeneration/remineralization
- Maintains an alkaline environment
- Antimicrobial
- Promotes healing



68

Bioactive Dental Materials

- Bases & Liners
- Restorative material
- Pulp capping material
- Cements
- Preventive materials
- Others



69

SIMPLIFIED Composite Placement with Reduced Sensitivity



70

CALSET Composite Warmer



Composite Tray
Warmer



Dispenser Gun
Tray

71

CALSET Composite Warmer



Composite Tray
Warmer



Heated Gun
Dispenser

72

ADVANTAGES Thermal Assisted Light Polymerization

W
A
R
M
E
R

- Increased flowability of composites
- Improved marginal adaptation
- Higher rate of polymer conversion
- Increased surface hardness & durability
- Decreased curing time
- Deeper depth of cure

Stanbury JW. Use of near-IR to monitor the influence of external heating on dental composite [photopolymerization. Dent Mat 2004; 20(8).

73

Solution

- Place a liner or base in deeper restorations
 - Reduces Post-Operative Sensitivity
 - Prefer Ion-releasing material (Bioactive)
 - Prefer not opening dentinal tubules

74

Very deep <0.5mm

- Liner first, then covered by a base
- Stimulates & provides ions for reparative dentin

TheraCal LC

Lime-Lite



75

TheraCal

(Calcium Silicate-Resin based liner/base*)

- Light cured apatite forming MTA in a hydrophilic resin
- Material sets hard and adheres to dentin
- Alkaline pH
- Releases Ca^{++} ions
- Ideal for indirect & direct pulp caps
- Useful when unsure of pulp exposure



*Res GMA, polyethylene glycol dimethacrylate, modified calcium silicate filled with CaO , MTA (Portland cement), SR glass filled silica, barium sulfate, barium zirconate

76

Limelight Enhanced

(Resin based liner/base)

- Releases and recharges Ca, P & F
- Moisture tolerant
- Reduces detrimental MMP effects
- Good compressive strength & toughness
- Radiopaque
- Good all-purpose value priced liner

77

Deep >0.5mm

- Buildup to ideal depth
- Provide insulation & reduce recurrent decay



Calcium Silicate
Resin



Enhanced Ion
Resin RMGI



78

Large >0.5mm

- Buildup to ideal depth
- Provide insulation & reduce recurrent decay



GI



RMGI



79

Concerns

- Pulpal Temperature Rise?
- An increase of 10 °C results in 15% pulpal deaths
- 130 °F composite 1mm from dentin raised pulp 2.9 °F
- 1° IPT Rise-Light Heat & Polymerization reaction

Zach L. Cohen G. Pulp Response to Externally Applied Heat. Oral Surg Oral Med Oral Pathol. 1985; 59:215-20.

Frederick Rueggeberg, DDS, MS Medical College of GA.

Below ideal depth

- Reduce sensitivity
- Provide insulation & reduce recurrent decay

Vitrabond
Powder/Liquid RMGI

GC Fuji Lining LC
Paste/Paste RMGI



80

81

Ideal depth

- Reduce sensitivity
- Disinfect
- Increase bond strength
- Provide bond strength stability-MMP Inhibition



GLUMA



HemaSeal & Cide



82

GLUMA Contains:

- Gluteraldehyde
- Disinfects surface
- Inhibits MMPs
- HEMA
- Seals dentinal tubules
- Wets surface to prevent collagen collapse

83

Hemaseal & Cide Desensitizer Contains:



- HEMA
 - Seals dentinal tubules
 - Wets surface to prevent collagen collapse
- Chlorhexidine
 - Disinfects surface
 - Inhibits MMPs

84

Hemaseal & Cide



- Reduced post-operative sensitivity
- Antimicrobial activity
- Inhibits enzymatic degradation
- Enhanced dentin bond strength
- Reduced micro-leakage
- No soft tissue burning
- Economical

85

Bactericidal




Chlorhexidine provides Excellent antimicrobial activity.

Dental Advisor Evaluation

86


Better Hybrid Zone Bonding



Infuses the dentin surface bringing HEMA and water with it. It helps the collagen fibers stand up for better hybrid zone bonding

87

Increased dentin bond strength

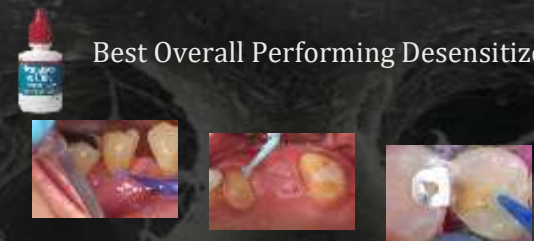


| Dentin Type | With HS & C | Without HS & C |
|--------------------|-------------|----------------|
| Deep Dentin | 29 | 28 |
| Superficial Dentin | 36 | 27 |

TM Powers, Dept of Restorative and Biomaterials 1999.

88

Best Overall Performing Desensitizer



Desensitization Disinfection Enhanced Bond Longevity

CRA Newsletter

89

If you would like to try:

Scan this QR code
OR
Text "Advantage" to:
800-388-6319



90

Large Posterior Composites Layering

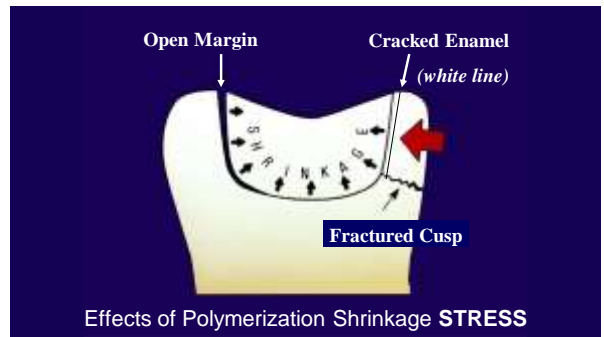


INEFFICIENT!

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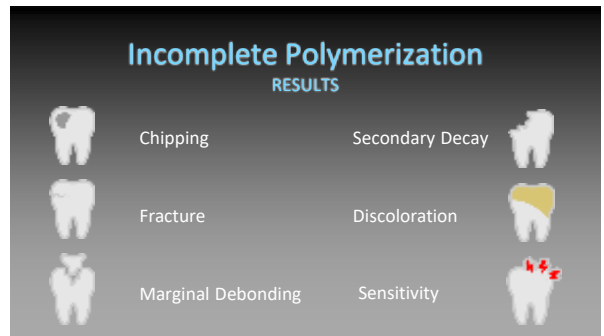
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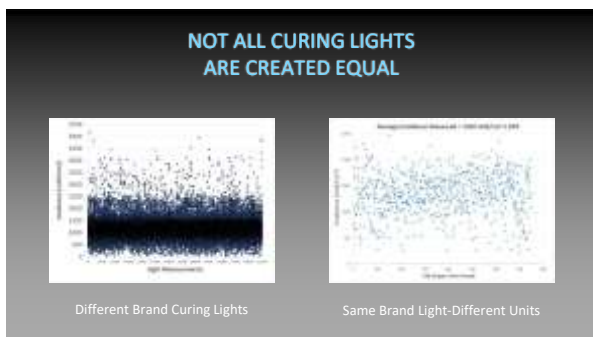
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96



97

Each Curing Light Analyzed



- Light Output
- Wavelengths
- Collimation



BlueLight Analytics

98

Each Curing Light Analyzed



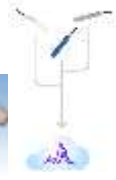
- Angle of Light Tip
- Heat
- Ergonomics & Ease of Use

BlueLight Analytics

99

Databases Created by BlueLight

- Each Curing Light Characteristics
- Each Popular Composite & Shade



LCU Spectral Dataset
(700+ LCU @ 25K+ clinics)



Composite Dataset
(Technical info for 800+ Materials)

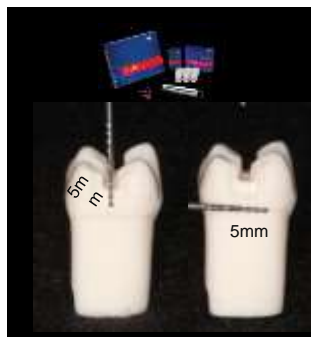
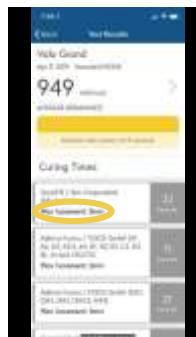
100

In-Office Procedures

- Test Output of All Curing Lights
- Enter Light, Composite & Shade



101



102

Bulk Fill Composites



- Modes of Action
 - Initiators more light sensitive
 - Greater translucency allows better light transmission
 - Delayed gel state formation
 - Increased elasticity
- Advantages
 - Quicker, easier
 - Deeper depth of cure
 - Decreased polymerization shrinkage STRESS
 - Fewer air voids between layers
 - Gives dentist confidence to tackle larger restorations

103

Bulk Fill Flowable Composites



- Excellent with smaller preparations
- Difficult access-2nd or 3rd molars
- Challenging anxious patients
- Cusp-buildup technique
- Increased translucency
- Results are surprisingly good

104

SONIC FILL 3

Sonic Energy Assisted Light Polymerization



- Improved flowability of composites
- Improved marginal adaptation
- 5mm depth of cure
- Delayed gel state decrease stress
- Increased sculptability
- Designed for large posterior use

105

Sonic Fill Composites

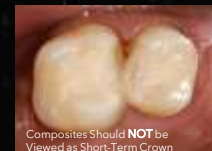


- Simpler
- Easier
- Quicker
- Fewer bubbles & voids between layers
- Confidence in placing large restorations

106

Composite Direct Placement Challenges

♦ Interproximal Contacts



Composites Should **NOT** be
Viewed as Short-Term Crown
Buildups

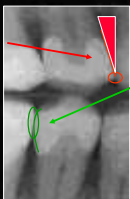
Christensen JF. Duplicating the form and function of posterior teeth with Class II resin-based composite. Gen Dent. 2012;60:104-108.

107

Tofflemire vs. Sectional Matrices

Tofflemire System

- Thin contact at the marginal ridge
- Non-anatomical
- Food trap below contact
- Increased likelihood of fracture, recurrent caries and periodontal disease.



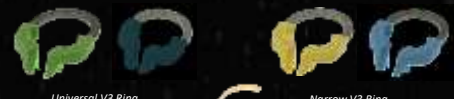
Sectional Matrices

- ✓ Broad contacts at the proper height of contour
- ✓ Anatomically shaped contacts
- ✓ Tight Contacts
- ✓ Proper contacts that floss properly for better gingival health

108

Sectional Matrix-Retainers

Strong separating force



TrioDent/Palodont

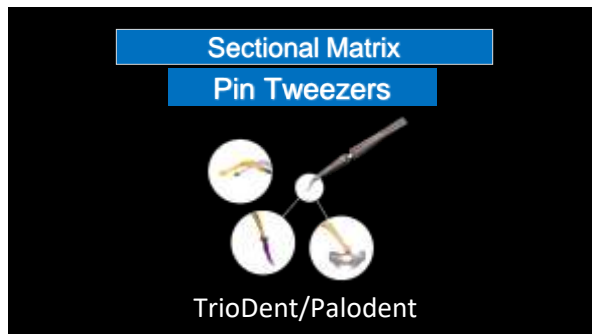
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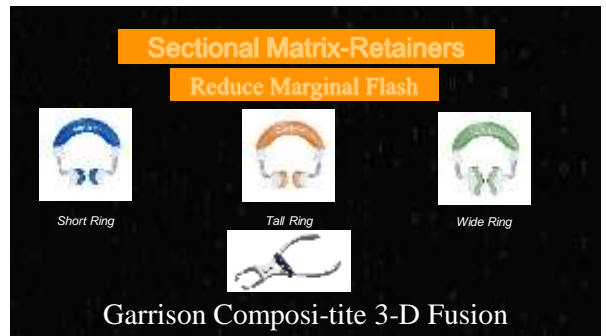
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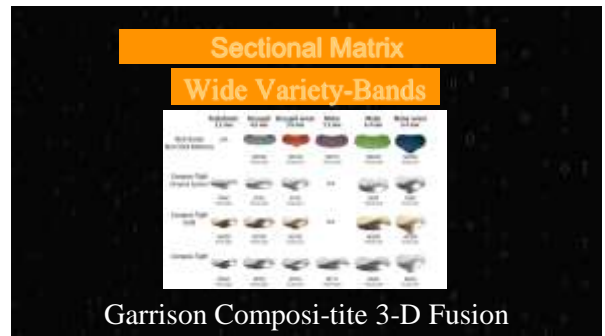
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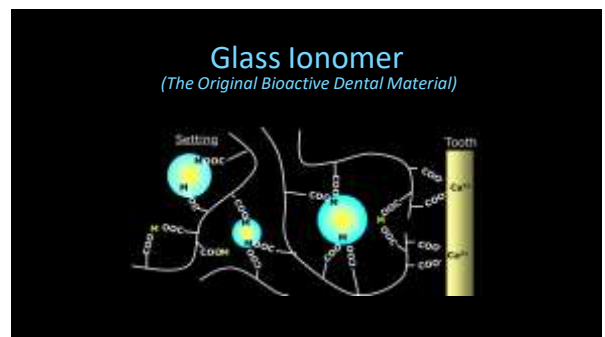
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Glass Ionomer Restoratives

(The Original Bioactive Dental Material)

- Self-curing: Acid/Base setting reaction
- Ionic Bonding to tooth Calcium
- NO polymerization shrinkage stress
- More highly filled-**reduced** wear(*compared to RMGI*)
- Expansion/contraction similar to tooth
- High Fluoride Release-Bioactive

134

Glass Ionomer Uses

(The Original Bioactive Dental Material)

- Class III, V Restorations
- Pediatric Patients
- Sealants
- Sandwich Technique (open & closed)
- Crown Buildups
- Posterior Restorations
- Long term interim restorations
- (Cements)

135

Glass Ionomer Restorative Materials



Fuji IX Self Cure
Glass Ionomer



RIVA Self Cure
Glass Ionomer



FX-II Self Cure
Glass Ionomer

136

Glass Ionomer Posterior Restorations



Deep crack line

137

Glass Ionomer Posterior Restorations



Sectional Matrices, Bulk Placement

138

Glass Ionomer Posterior Restorations



Completed Restoration

139

Glass Ionomer High Caries



Drug User

140

Glass Ionomer High Caries



Spoon out decay and refine prep

141

Glass Ionomer High Caries



Place and rinse Poly-acrylic acid

142

Glass Ionomer High Caries



Mix Gi and quickly place and push out

143

Glass Ionomer High Caries



Allow to set 2:30

144

Glass Ionomer High Caries



Hold down gingiva and shape

145

Glass Ionomer High Caries



Final Immediate Result

146

Posterior Glass Ionomer



Equia Forte



Riva Self Cure HV

- Stronger, more opaque
- Long-term provisional restoration
- High-carries risk patients
- Deep sub-gingival molar interproximal restorations
- Thin buccal walls
- Cracked teeth
- Transitional restoration before a crown

147

Posterior Glass Ionomer



High caries risk patient

148

Posterior Glass Ionomer



High caries risk patient

149

EQUIA Forte HT



- High Translucency
- Higher Fluoride Release
- Higher Compressive Strength
- Long-term Interim Restorations

Surface-treated FAS glass



High reactive, fine FAS glass

Polyacrylic acid powder
High Molecular Weight:
Low Molecular Weight

150

Glass Ionomer Posterior Restorations



Fine diamonds, surface sealant

151

Posterior Glass Ionomer



- 5-10% of posterior teeth restored
- High caries situations
- Thin buccal or lingual walls
- Deep internal cracks
- Deep subgingival Class II near pulp
- Decalcified chalky margins
- Long Term Interim Restorations
- Invaluable Adjunctive Material

Summary

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Resin-Modified Glass Ionomer (RMGI)



153

Resin-Modified GI Properties (compared to "pure" glass ionomer)

- Dual-curing: Acid/Base & Polymerization Reaction
- Ionic & Micro-mechanical Bonding
- Shrinkage stress if cured prior to set
- Higher tensile, bond strength and wear
- More Translucency
- Fluoride Release-Bioactive (less than GI)

154

Resin-Modified GI Uses

- Liners & Bases
- Class V Restorations
- Pediatric Patients
- Sandwich Technique (open & closed)
- Crown buildups
- Short term provisionals
- Cements
- Bonding Agents

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RMGI Base

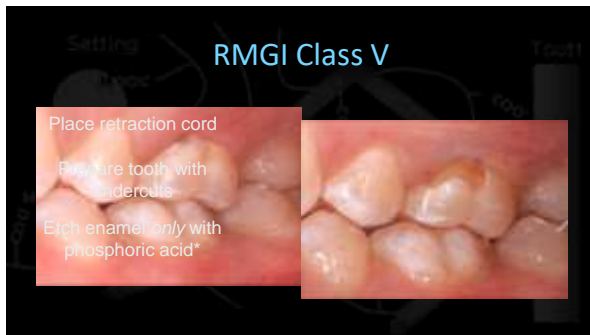


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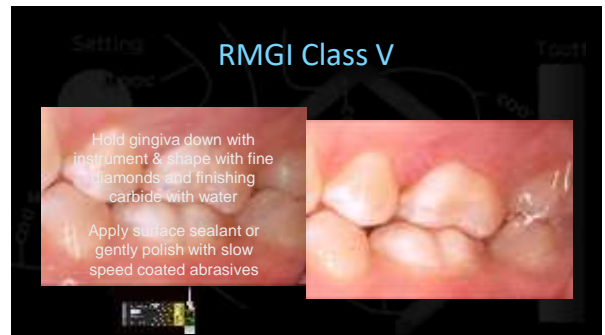
RMGI Base



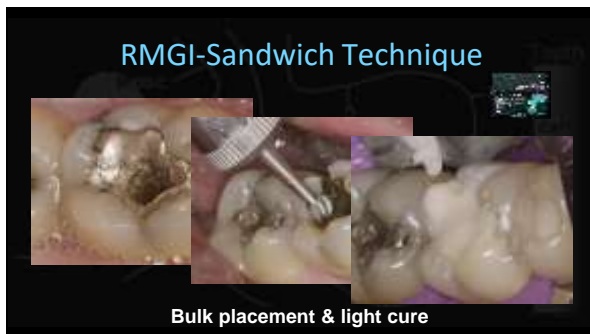
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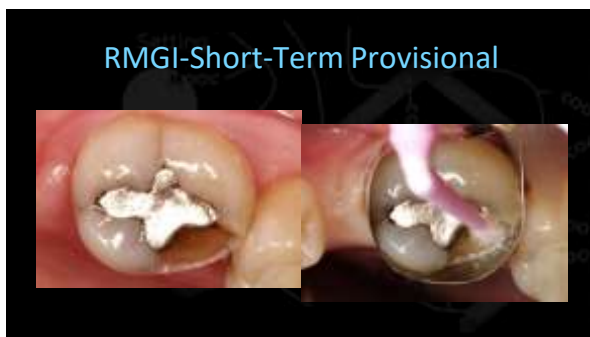
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162



163

Resin Based Bioactives vs. Glass Ionomers

- Resin Matrix
- Primarily micro-mechanical retention-self adhesive
- Calcium & Phosphate release
- Lower fluoride release
- Higher compressive strength
- Dual cured

164

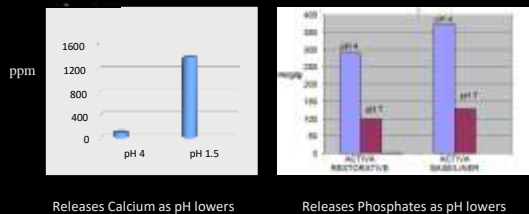
ACTIVA Restorative Properties



- Higher compressive & flexural strength
- Lower wear than GI & RMGI
- Glass ionomer filler particles
- Ionic resin matrix
- Calcium, phosphate & fluoride release
- Dual cure, self cure, light cure
- Bioactive

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ACTIVA



166

Activa Restorative Uses

- Class V restorations
- Class I II III restorations
- Pediatric patients
- Geriatric patients
- Crown buildups

167

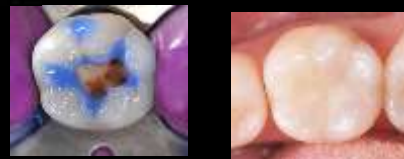
Activa



Class I

168

Activa



Selective etch enamel only

Class I

169

Giomer Products

Multifunctional glass core

- High radiopacity
- Excellent light transparency
- Hardness is equal to Enamel

Surface modified layer

- High mechanical property
- Long-term stability

Glass ionomer phase

- Fluoride release and recharge
- Multi-ion release
- Bio-activity

• Surface Pre-Reactive Glass Fillers

170

Giomer Products

Unique Formulation

• Surface Pre-Reactive Glass Fillers

171

Beautiful Flow Plus X

(High Viscosity Flowable Composite)

- Releases and recharges FI
- Liner, base or restoration
- Light-cured
- Releases Giomer Ions
- Excellent Polishability
- Radiopaque

172

Beautiful Flow Plus X

(High Viscosity Flowable Composite)

- Low Wear
- Excellent handling
- Polishes nicely
- Bioactivity

Set Glass Ionomer Material Surface Modified Pre-Reactive Glass Ionomer Filler

173

Beautiful Flow Plus X

174

Beautiful II Gingiva

- Class V restorations (exposed cervical areas, replacement of lost tooth substance, optimization of wedge-shaped defect, etc.)
- Protection of receding gingiva (root exposure)
- Restoration of the appearance of gingiva
- Reconstruction of gingiva after periodontal surgery

Dr. Frank Milnar

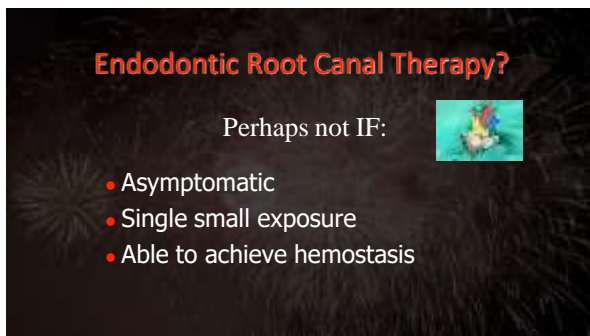
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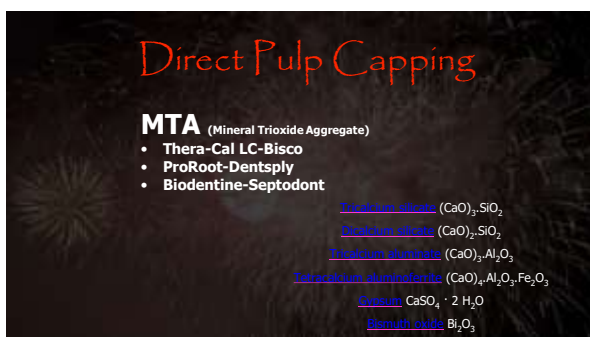
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181

Resin Direct Pulp Capping



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Resin Direct Pulp Capping

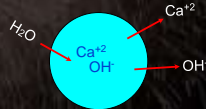


183

Resin-Free Direct Pulp Capping

Biodentine

- Tri-calcium silicate (Portland Cement)
- Self Curing (12 minutes)
- Material sets hard and adheres to dentin
- No Shrinkage
- Alkaline pH
- Releases Ca^{++} ions
- Kindest to Pulp



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Resin-Free Direct Pulp Capping



- Place liquid into capsule-mix 30 sec
- Wait 12 minutes
- Can place RMGI bonding agent & composite

185

Biodentine XP



- Simplified placement 6200 rpm Tritrator
- Comes in 200mg & 500mg sizes
- Expanded uses

186

Biodentine XP Expanded Uses

- Base for deep restorations
- Base for indirect pulp caps
- Interim restoration
- Direct pulp cap
- Partial Pulpotomy for Irreversible Pulpitis?

187

Biodentine Placement



188

PHILOSOPHY Resin-MTA Non-resin MTA

- | | |
|------------------------|-------------------------|
| •Dual Cure | •Self Cure |
| •Immediate Set | •12-minute Set |
| •\$1 | •\$18 |
| •Syringe delivery | •Uses triturator |
| •Can irritate Pulp | •Kindest to Pulp |
| •Very good results | •Best long-term results |
| •Practical Alternative | • GOLD Standard |

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Direct Pulp Capping



- Best is to avoid
- IFF Asymptomatic
- IFF 1 small exposure
- IFF Able to control bleeding
- Irrigate with chlorhexidine
- MTA is most effective
- Theracal-quicker, easier, less expensive

Summary

190

SIMPLIFIED AGE APPROPRIATE RESTORATIONS



191

US Population is Aging

- Xerostomia
- Root exposures
- Difficulty maintaining oral hygiene
- Some unable to tolerate long appointments
- Difficulty coming to office
- Fixed Income



192

Aging Population Challenges- Xerostomia



Multiple Medications

193

Aging Population Challenges- Xerostomia



"40% of all prescription drugs
have dry mouth listed in the
PDR as a possible side effect"

Chalmers J. Personal Communication, 2006.

194

Aging Population Challenges- Xerostomia

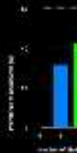


In a published study of 131 different
prescribed medications the most
common side effect cited was
xerostomia.

Smith RG, Burner AP. Oral side-effects of the most frequently prescribed drugs. Spec Care Dent. 1994;14:95-102.

195

Aging Population Challenges- Xerostomia



- Incidence increases with # of drugs taken
- 50% of patients taking 4 or more medications had Dry Mouth

196

Aging Population Challenges-Transportation



Medical Transport

197

Long-Term Interim Restorations

Using Glass Ionomer Restorative Materials



198



Tooth Excavation



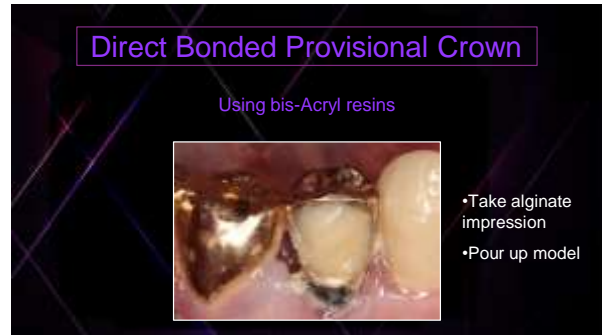
Band w Opening



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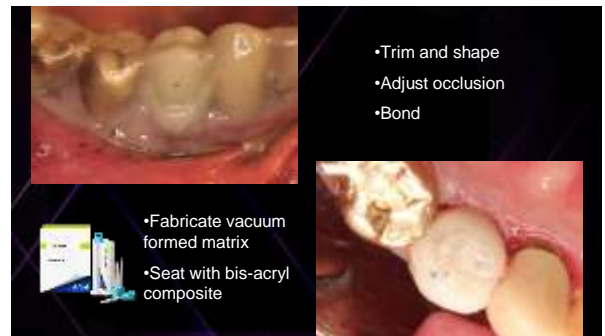
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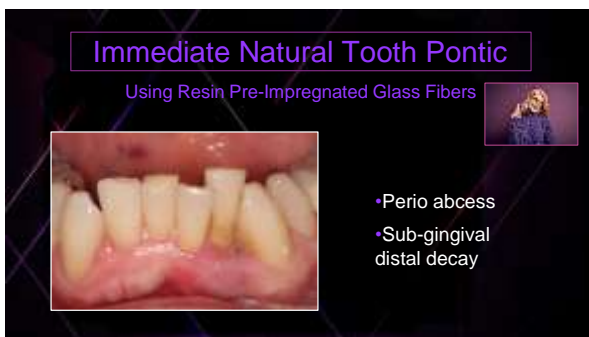
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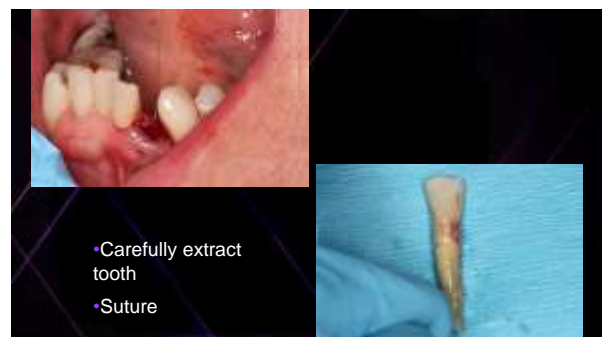
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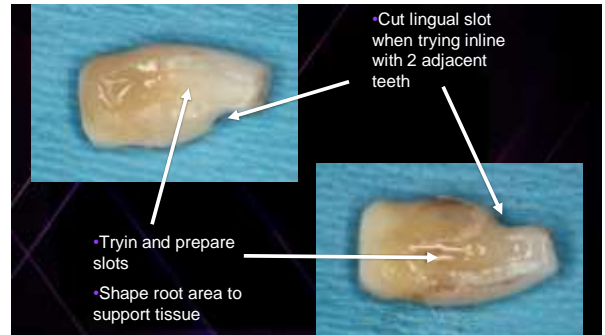
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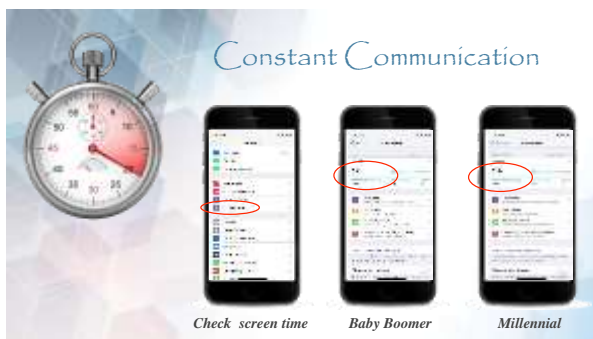
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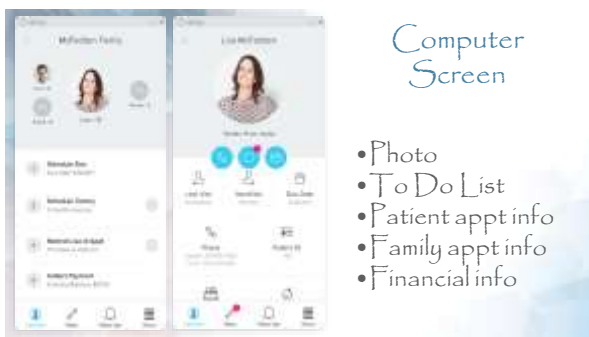
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222



223

What Happens when the phone rings



- Photo
- To Do List
- Patient appt info
- Family appt info
- Financial info

224

If no one answers Caller



- During Business Hours
- When Office is Closed

225

Two-Way Texting



- Preferred way to communicate
- Making appointments
- Short notice available appt
- Overdue Balance Notice

226

Appointment Reminders



- Requests a Response
- Confirm or Cancel

227

HEADPHONES



- Easily connected
- Convenient

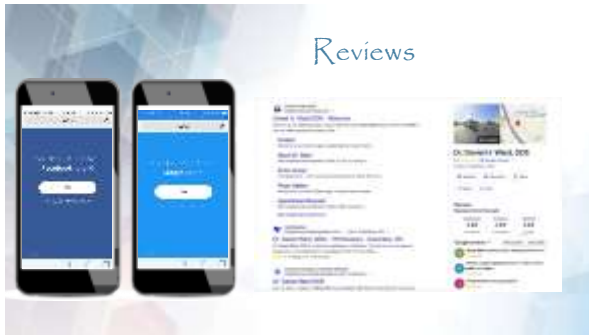
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Practice Analytics



- Number of calls placed
- Number of calls answered
- Number of Missed Calls

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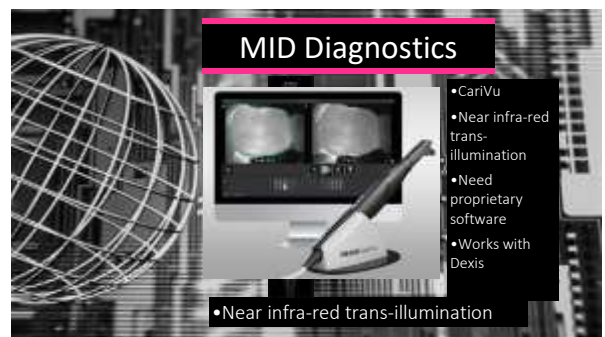
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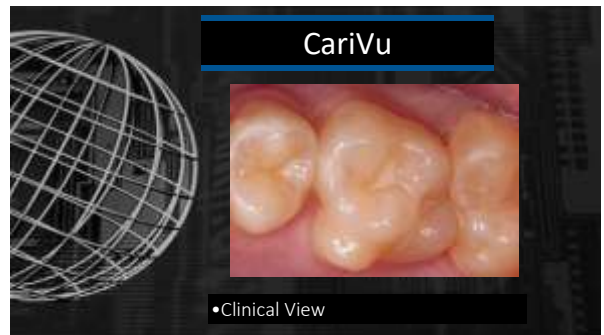
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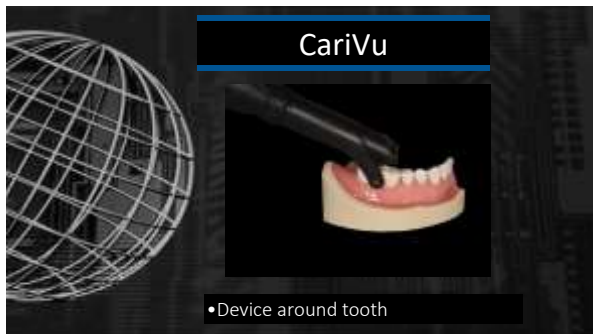
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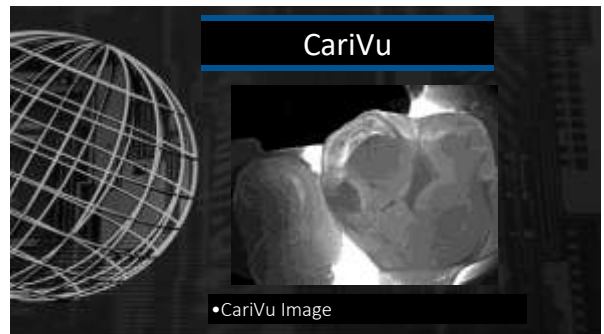
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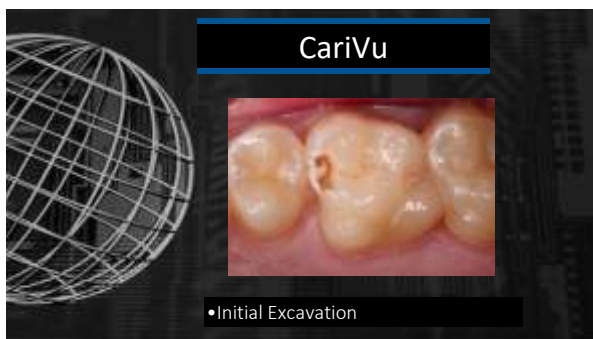
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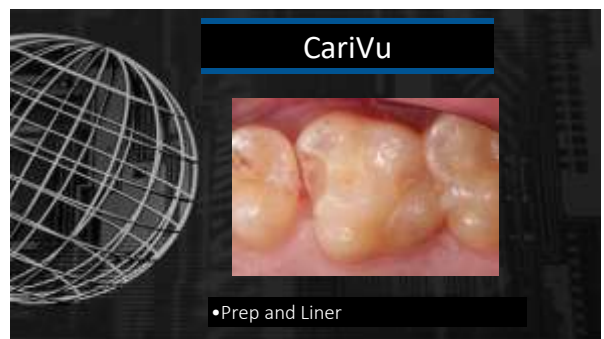
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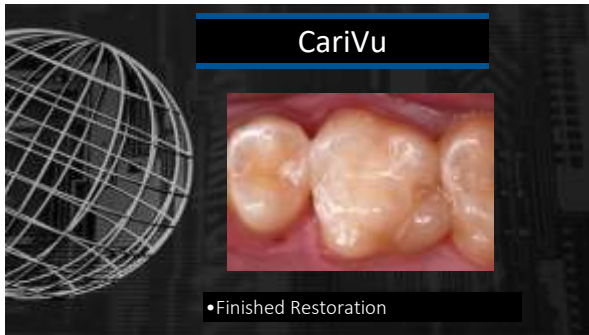
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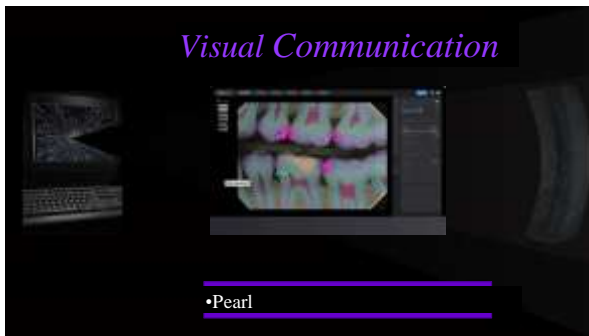
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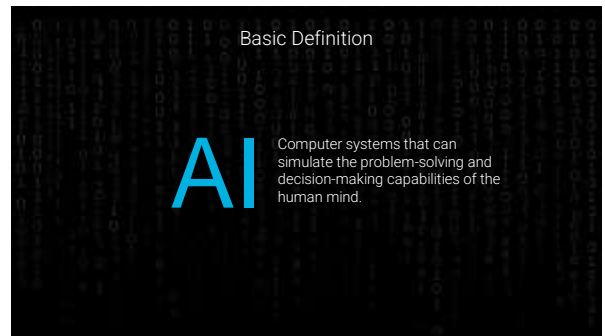
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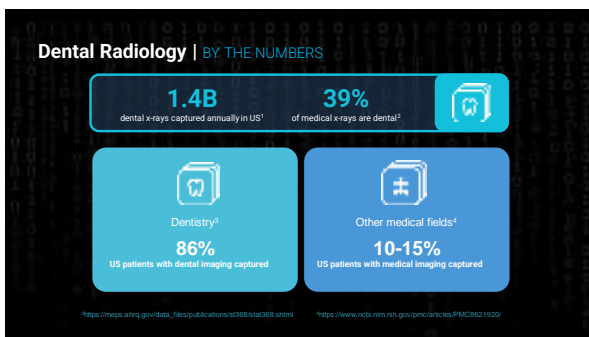
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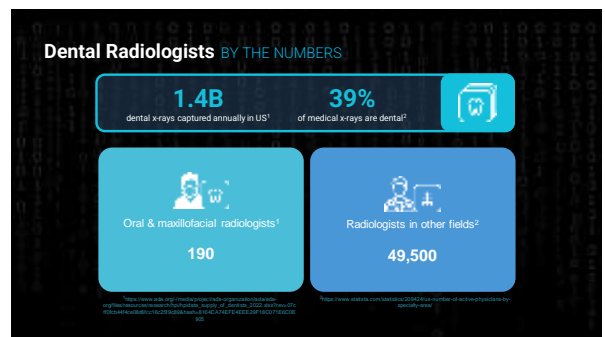
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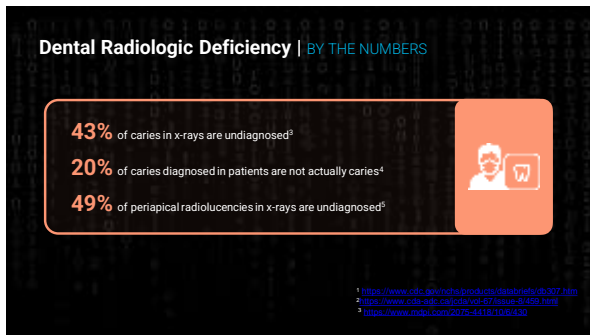
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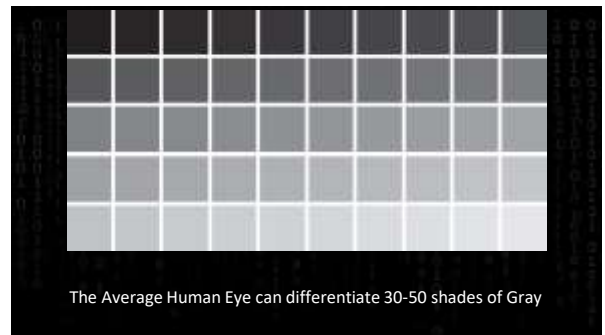
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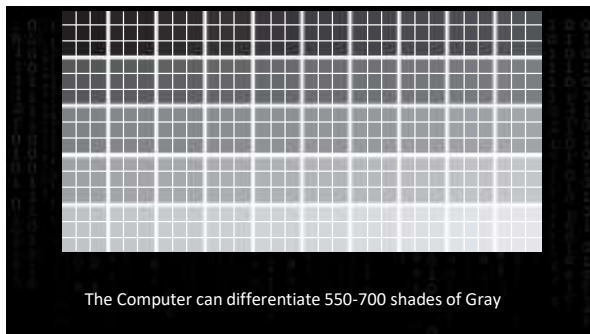
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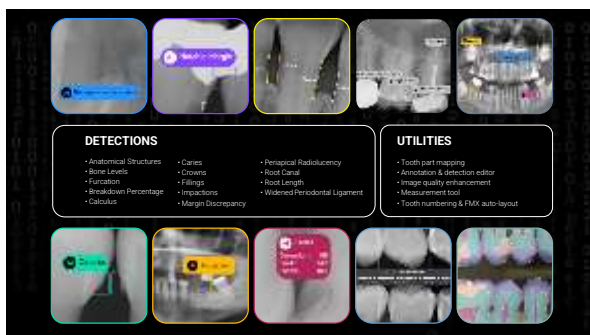
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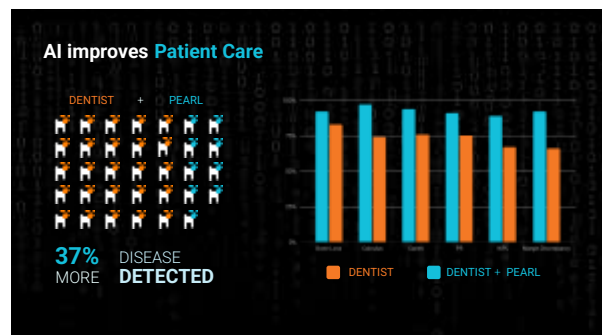
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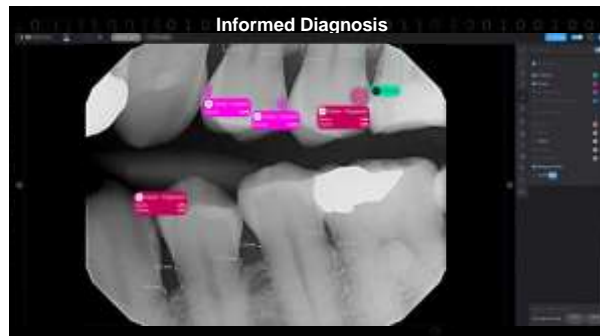
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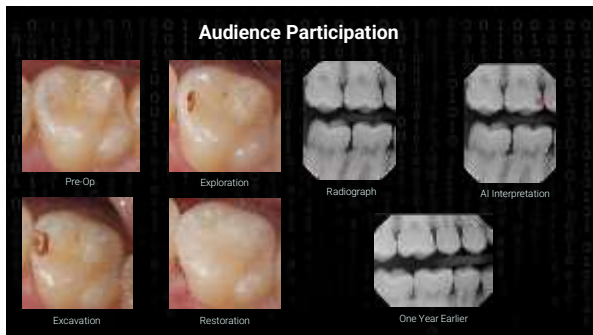
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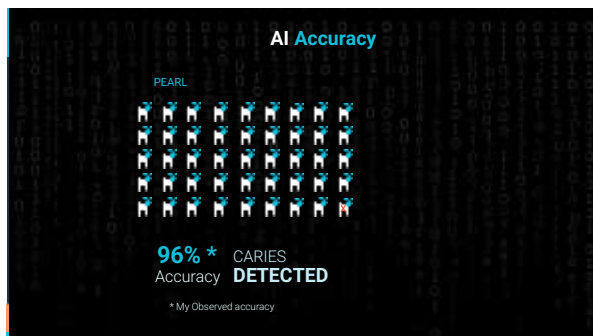
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AI improves Patient Treatment Acceptance

- Helps Patients Visually Understand Need for Treatment
- Educates Patients About Their Teeth
- Helps Dentists Better Detect Pathology
- Confirms Trust in Dentist's Recommendations
- Demonstrates Practice Provides State of the Art Technology
- Builds Confidence in Office
- Patients More Likely to Talk About It & Refer Friends

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